Remarks

This timely filed Reply is responsive to the Final Office Action mailed on April 16, 2006. Claims 1-26 were pending at the time of the Final Office Action. In this Reply, claims 1, 10, 11, 14, 15 and 22 have been amended, and claim 26 has been cancelled. No new matter has been added.

The undersigned wishes to thank the Examiner for participating in a helpful teleconference regarding the present case which took place on May 10, 2006. During the teleconference the Examiner explained his position regarding Applicant's former claim language recited in method claim 1 (and system claim 15) not clearly reciting synchronous luminescence which requires simultaneous scanning of the emission and excitation wavelength. Paragraph 5 of Applicant's specification was discussed during the teleconference which discloses the following:

[0005] Synchronous luminescence (SL) methodology is an improved technology over LIF and provides a way to measure the luminescence signal and spectral fingerprints for rapid screening of complex chemical samples. The general theory of the SL method has been described previously in "Synchronous Excitation Spectroscopy," authored by the inventor of the present application T. Vo-Dinh, in Modern Fluorescence Spectroscopy, Chapter 5, Ed. by E. L. Wehry (Plenum Publ. Corp. 1981), which is incorporated herein by reference in its entirety. In contrast to SL, conventional luminescence spectroscopy uses either a fixed-wavelength excitation (λ_{ex}) to produce an emission spectrum or a fixed wavelength emission (λ_{em}) to record an excitation spectrum. *With SL, the luminescence signal is recorded while both λ_{em} and λ_{ex} are simultaneously scanned.* A constant wavelength interval is generally maintained between the excitation and the emission monochromators throughout the spectrum. As a result, the observed intensity I_s of the synchronous signal can be written as a product of two functions as follows:

$$I_s (\lambda_{ex}, \lambda_{em}) = k\, c\, E_x (\lambda_{ex}) \cdot E_M (\lambda_{ex}) \qquad (1)$$

where:

k = a constant,
c = concentration of the analyte,
E_x = excitation function, and
E_M = emission function

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It was agreed that the italicized language above would be added to clarify independent claims 1 and 15 and that following such amendment the claims would be examined as synchronous luminescence (SL) based claims. As amended, claim 1 now recites (italicized language above did require slight non-substantive modification to satisfy antecedent basis):

1. (Currently amended) A diagnostic method, comprising the steps of:

exposing at least one sample location with excitation radiation through a single optical waveguide or a single optical waveguide bundle, wherein said sample emits emission radiation in response to said excitation radiation;

receiving at least a portion of said emission radiation from said sample location in said single optical waveguide or said single optical waveguide bundle, wherein said single optical waveguide or said single optical waveguide bundle provides co-registration of said excitation radiation and said emission radiation, and

generating a spectrum using synchronous luminescence, wherein a wavelength of said emission radiation (λ_{em}) and a wavelength of said excitation radiation (λ_{ex}) are simultaneously scanned ~~synchronously scanning a wavelength of said excitation radiation and a wavelength of said emission radiation to produce a spectrum~~.

Claim 15 (system) has been amended in a manner analogous to claim 1.

In contrast, Clark only relates only to conventional spectroscopy, teaches a single narrow band excitation (785 nm laser diode; Col. 3, lines 11-23) source, and does not disclose or suggest scanning (or structure for scanning) the excitation or emission wavelength. Applicant notes that Clark's narrowband (single wavelength excitation) source clearly cannot be scanned. Accordingly, Applicant submits that the claimed

synchronous luminescence-based invention evidences an inventive step and is thus patentable over U.S. Pat. No. 6,208,887 to Clarke, as well as Clark in combination with any of the art of record in the present case.

Applicant has made every effort to present claims which distinguish over the cited art, and it is believed that all pending claims are in condition for allowance. However, Applicant requests the Examiner to call the undersigned (direct dial 561-671-3662) after review of this Reply if the Examiner determines that any clarification is necessary to permit issuance of a Notice of Allowance. If any fee is due, the Commissioner for Patents is hereby authorized to charge any deficiency in fees due or credit an excess in fees with the filing of the papers submitted herein during prosecution of this application to Deposit Account No. 50-0951.

Respectfully submitted,

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